IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.:	**10/798,989**	Examiner:	**Faisal M. Zaman**
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Filed:	**02/08/2006**	Art Unit:	**2112**
Title:	**GPRS Replaceable Module Communication Device**		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT A

In response to the Office Action mailed **02/08/2006**, please amend the above-identified application as follows:

Amendments to the Drawings begin on page 2 of this paper and include both an attached replacement sheet and an annotated sheet showing changes.

Amendments to the Specification begin on page 3 of this paper.

Amendments to the Abstract begin on page 8 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 9 of this paper.

Remarks begin on page 12 of this paper.

AMENDMENTS TO THE DRAWINGS:

FIG. 1 is amended to include text labels for describing each black box and the switch chip specified in the claims as shown in both annotated and replacement sheets.

AMENDMENTS TO THE SPECIFICATION:

Page 1, amend paragraph [0001] as:

[0001] The present invention relates to a GPRS (General Packet Radio Service) replaceable module communication device, and more particularly to a device that enables the GPRS communication module to provide different functions to meet different communication needs.

Page 1, amend paragraph [0003] as:

[0003] General Packet Radio Service (GPRS) is a technology proposed for solving the above problem. The emergence of the technical standard of GPRS facilitates the data exchange between the two networks. GPRS is a new packet data transmission service based on GSM, with addition of new data exchange points in the current GSM network. As the new data exchange points are capable of processing ~~packet~~ packets, the GSM network can exchange data with Internet network. The convenience of GSM wireless transmission is added to the information-rich Internet for easy sharing.

Page 2, amend paragraph [0005] as:

[0005] The GPRS cards are generally used in mobile computers and PDAs as the means for wireless communication, so that they can be connected to Internet through mobile phones. A conventional GPRS card usually consists of a motherboard installed with mandatory components, such as a GPRS communication module, and a battery set. Conventional GPRS cards also use a specific interface, such as Compact Flash, for interfacing other systems. However, as the GPRS card cannot be connected to the system

unless a suitable interface is used, it usability is limited. Alternatively, a PC or a PDA can be used to complete the device, but it greatly increases the cost.

Pages 2-3, amend paragraph [0009] as:

[0009] The mother board of the present invention of a GPRS replaceable module communication device comprises a controlling multiplexer for controlling the access to the data on the daughter board. The controlling multiplexer can detect the insertion or removal of the daughter board, and based on the presence of a daughter board to determine to read which board's control data. The daughter boards with different functions can be used to increase the functions of the motherboard of the GPRS [[card]] replaceable module communication device.

Page 3, amend paragraph [0012] as:

[0012] Figure 1 shows a schematic diagram of a GPRS replaceable module communication device of the present invention. The device of the present invention comprises a motherboard 1 and a daughter board 2. The motherboard 1 further comprises a controlling multiplexer 11, an electrically erasable programmable read only memory (EEPROM) 12, a solid state ~~static~~ disk (SSD) device bridge chip 13, a GPRS module 14, and a first connector 15. The controlling multiplexer further comprises a bus F_0 111, and a bus F_1 112.

Pages 3-4, amend paragraph [0013] as:

[0013] The daughter board 2 comprises an EEPROM 24, and a second connector 25. In addition, the daughter board 2 further comprises at least one of the following: a battery

set 21, a memory slot 22 or a ~~bluetooth/wireless LAN~~ BLUETOOTH wireless (or a wireless LAN) module 23, in order to form a daughter board with different ~~function~~ functions. Therefore, the daughter board 2 can have a combination of (a) a battery set 21, (b) a battery set 21 and a memory card 22, (c) a battery set 21 and ~~bluetooth~~ a BLUETOOTH wireless module 23, (d) a battery set 21 and a wireless LAN card, (e) a battery set and a GPRS module, or other possible combinations. The memory card 22 includes, but not limited to, MMC, SD or MS memory card.

Page 5, amend paragraph [0017] as:

[0017] The data on the daughter board 2, for example, from the EEPROM 24, the memory card slot 22, or the ~~bluetooth~~ BLUETOOTH wireless module 23, can be transmitted to the GPRS [[card]] communication device for execution from first connector 15, controlling multiplexer 11 and bus F_0 111 by two paths. One path is through the first connector 15, bus B_2 162, SSD device bridge chip 13, bus B_1 161, to controlling multiplexer 11. The other path takes the route of first connector 15, bus C 163, then directly to controlling multiplexer 11, and bypassing the [[SDD]] SSD device bridge chip 13. The switch chip 17 ~~(not shown)~~ is used for selecting the path to transmit data from the daughter board 2 to motherboard 1. The operation of the controlling multiplexer 11 to read either the control data on the EEPROM of the motherboard 1, or the control data on the EEPROM of the daughter board 2 is also executed by turning on or off the switch chip 17 according to the action of insertion or removal of the daughter board 2.

Page 5, amend paragraph [0018] as:

[0018] The main function of the [[SDD]] SSD device bridge chip 13 is to transmit the data on the removable daughter board 2, such as SD, MMC, and MS, to the True Integrated Drive Electronic Interface (IDE). It serves the same purpose as the adaptor to the personal computer memory card international association (PCMCIA).

Pages 5-6, amend paragraph [0019] as:

[0019] The main functions of the EEPROM 12, 24 include: (1) storing PCMCIA card information structure (CIS), and (2) storing a configuration value to configure the controlling multiplexer, in order to determine its operation mode. For example, the EEPROM 93C56 has 256 bytes, where bytes 00-EF store the CIS. The configuration values of the EEPROM 93C56 are as follows: in configuration 001, both bus F_0 and bus F_1 are set to the universal asynchronous receiver/transmitter (UART). In configuration 010, bus F_0 is set to the programmed input/output (PIO), and bus F_1 is set to the UART. In configuration 100, bus F_0 is set to the True IDE, and bus F_1 is connected to the UART. In configuration 101, bus F_0 is disconnected, and bus F_1 is set to the UART. Configurations 001, 010, and 100 are multi-function modes, while configuration 101 is single-function mode, and so on. That is, when power on, the data on the EEPROM 93C56 will be input to the controlling multiplexer. There will be 240 bytes of the CIS data stored in the RAM buffer, and the remaining 16 bytes are used to configure the controlling multiplexer. Then, the system host sends a reset signal to the card to determine the operation mode of the multi-function control card, followed by determining, based on the 240 bytes of CIS in the RAM buffer, which operating system the card will operate under. In other words, the functions of the chip is first determined

by the 16-byte configuration values and the reset signal from the host, then the operating system to determine the functions of the card under ~~Win98/2K/CE~~ WIN98/2K/CE operating systems.

AMENDMENTS TO THE ABSTRACT:

A GPRS replaceable module communication device includes a motherboard and a daughter board. The motherboard includes necessary components for enabling GPRS [[card]] module operation and selecting module interface and setting, while the daughter board is a modularized add-on card[[,]] whose function is determined by a replaceable module. The same GPRS motherboard can be used to accommodate different daughter boards for different functions, and [[said]] the GPRS [[card]] motherboard determines either to read the control data on [[said]] the motherboard, or the control data on [[said]] the daughter board by the insertion or removal of the daughter board.

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A general packet radio service (GPRS) [[GPRS]] replaceable module communication device, comprising:

a motherboard having GPRS components including at least a controlling multiplexer, a first bus connected to said controlling multiplexer, a second bus, a solid state disk (SSD) device bridge chip between said first and second buses, an electrically erasable programmable read only memory (EEPROM) interfaced with said controlling multiplexer, a third bus connected to said first bus, a GPRS module interfaced with said controlling multiplexer, a first connector and a switch chip for connecting either said second bus or said third bus to said first connector; and

a daughter board having at least an EEPROM and a second connector for connecting to said first connector;

wherein said motherboard determines to read control data stored in the EEPROM of said motherboard or control data stored in the EEPROM of said daughter board, and said switch chip controls transmission path of said control data of said daughter board to said controlling multiplexer.

~~a motherboard and a daughter board, wherein said motherboard has GPRS components, and said daughter board is a modularized add-on card, whose function is determined by a replaceable module, and said GPRS card determines either the control data on said motherboard, or the control data on said daughter board.~~

2. (Cancelled).

3. (Currently Amended) The device as claimed in Claim **1**, wherein said daughter board ~~comprises at least an EEPROM, a connector, and~~ further comprises at least one of the following three devices: a battery set, a memory card slot, ~~or a Bluetooth~~ and a BLUETOOTH wireless module.

4-5. (Cancelled).

6. (Currently Amended) The device as claimed in Claim [[**5**]] **1**, wherein said control data of said daughter board is transmitted through said second connector on said daughter board, said first connector on said motherboard, said [[first]] second bus, said SSD device bridge chip, and said ~~second~~ first bus, to said controlling multiplexer.

7. (Currently Amended) The device as claimed in Claim [[**5**]] **1**, wherein said control data ~~controller~~ of said daughter board is transmitted through said second connector on said daughter board, said first connector on said motherboard, [[or]] and said third bus to said controlling multiplexer.

8. (Cancelled).

9. (Currently Amended) The device as claimed in Claim [[**8**]] **1**, wherein the operation of said switch chip is determined by the action of insertion or removal of said daughter board.

10-11. (Cancelled).

12. (Currently Amended) The device as claimed in Claim [[**4**]] **1**, wherein the operation of said controlling multiplexer to read either said control data on said EEPROM of

said motherboard, or said control data on said EEPROM on said daughter board is executed by [[a]] said switch chip.

13. (Currently Amended) The device as claimed in Claim **12**, wherein the operation of said switch chip is determined by [[the]] turning on or off ~~the pins of~~ said switch chip through the action of insertion or removal of said daughter board.

14-15. (Cancelled).